

Hormone replacement therapy and successful pregnancy in a patient with premature ovarian failure

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Abstract

Most of the patients with Premature Ovarian Insufficiency (POI) were accidentally diagnosed. Premature Ovarian Failure (POF) has a psychological and social negative impact on the life of a female, specially her fertility. Despite the fact that there is a 5 % probability of spontaneous pregnancy; multiple clinical trials have been applied for POI patients. This report documents the case of a 33-year-old woman with POI who was diagnosed accidentally. After five years of infertility, this patient was advised to receive Hormone Replacement Therapy (HRT). Following six months of treatment, the patient conceived spontaneously, and a healthy baby was born. Thus, HRT would appear to be not just to relieve the associated menopausal symptoms, but it is highly recommended in cases of infertility for POI.

Introduction

Premature Ovarian Failure (POF) is not a rare condition with an incidence estimated at 1 % among patients less than 40 years old [1]. There are various etiologies for POI which are mostly idiopathic, while other causes include autoimmune, genetic factors, iatrogenic, infectious, and environmental issues [1].

The infertility for POI is usually intermittent as some patients resume their ovarian activity and can conceive [2]. POI is associated with many health problems involving hot flashes, night sweats, vaginal dryness and decreased bone mass and a risk of cardiovascular diseases [3].

Regarding the predictive value for the possibility of resumption of the ovarian function, some studies have revealed that Follicular Stimulating Hormone (FSH) (most sensitive) Antra-Follicles Count and Anti-Mullarian Hormone are useful [4]. Other clinical predictive factors such as secondary amenorrhea and family history of POF are associated with a high possibility of resumption of ovarian activity [5].

With regard to the etiology of POI, it is not fully understood. Consequently, the treatment for POI is still under research. Some patients have recovered their ovarian function and achieved pregnancy while others have undergone clinical trials [6,7].

The reported case concerns a young woman with POI of an autoimmune cause (Hypothyroidism) who showed a resumption of her ovarian function and achieved a spontaneous pregnancy after a period of six months of HRT.

Case report

The patient was a 33-year-old woman who had primary infertility over five years with a female factor (normal semen analysis and absence of organic causes). She had her menarche at 12 years old with regular cycles, lasting 3 to 5 days, with a normal Body Mass Index (BMI) of 26. Her personal and family history was unreliable apart from a positive history of Hypothyroidism with treatment (thyroxin) and no

family history of POI. An infertility hormonal assay was done on the 3rd day of the cycle (basal FSH level=52 mIU/ L; LH level=22 mIU/ L; E2(estradiol) level=43 pg/m L; AMH=0.024 ng/ml), which showed high levels of gonadotropins. TSH=3 Mu/ml on treatment (150 mg thyroxin). Other investigations (prolactin, random blood sugar and serum calcium) were normal. Transvaginal Ultra-Sonography (TVS) showed low Antra-follicle count AFC (one AFC) with no other pathology detected.

A hormone replacement regimen was initiated with 2/10 mg of (oestradiol hemihydrate and Dydrogesterone) daily for 28 days every month. The prescribed treatment had two phases during the 28 days. For the first 14 days 1 tablet containing 2 mg estradiol and during the last 15 days, 1 tablet containing 2 mg oestradiol with 10 mg dydrogesterone.

After six months on treatment, the patient noticed a missed cycle. At this time, the β -hCG level was positive, TVS showed an early intra-uterine pregnancy. So, the HRT therapy was stopped, and folic acid and luteal phase support were advised. The pregnancy proceeded without any complications. At the 38th week of gestation, an elective cesarean section was performed and a healthy child was born.

Discussion

POI does not indicate a permanent cessation of ovarian function as 20 % of those women affected spontaneously ovulated while some need medical therapy [8]. The above case of POI with an autoimmune cause (hypothyroidism) and conceived after six months of HRT producing a healthy baby after five years of infertility.

The main issue in POI is deficiency in ovarian steroids. Therefore, some studies have proposed that exogenous HRT will resume the

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ovarian function by maintaining ovarian steroids and eventually maintain the fertility and these results were positive with regard to pregnancy [9,10].

Other intervention protocols have been described by some studies and involved suppression of gonadotropins FSH and the induction of ovulation by Human Menopausal Gonadotrophin (HMG) with different doses depending on the ovarian response. However; both the studies did not give a significant result with regard to the pregnancy rate [11,12].

It is recommended for POI patients to be studied well in a large population in order to determine the etiology (patient's selection or grouping) and so establish the probability of resuming the ovarian function. More importantly, it is essential to know the quality and quantity of ovarian oocyte reserve because the aim is not only ovulation but to improve the pregnancy rate as well.

Conclusion

The possibility of ovarian function to be resumed and the achievement of pregnancy is still possible, either spontaneously or after having therapeutic trials. Women with POI should be advised to receive HRT for different periods of time in order to ovulate and conceive.

Conflict of interest

The authors have no conflict of interest to declare.

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